

Bexley demolition sought

Facilities official says renovations not worth it

By Stan Gill
NEWS EDITOR

Yesterday, at a meeting with the advisory group for the future of Bexley Hall, the Department of Facilities and the Division of Student Life put forth a recommendation for the demolition of the building. Formerly an undergraduate dorm, Bexley Hall was closed after commencement this past year after inspections revealed a myriad of structural issues. If the recommendation is accepted by senior MIT administrators, the proposal will go to the City of Cambridge to acquire the necessary permits to evaluate and demolish the historic building.

Director of Campus Planning, Engineering & Construction Richard L. Amster expressed that after evaluating the building's condition, reno-

vating and reusing the building would essentially mean rebuilding it from the ground up.

Although Amster did not disclose the preliminary cost-benefit analysis that Facilities had done, he suggested that demolishing the building and starting anew may simply be a better value for the Institute in the long run. If the building were to be renovated for structural integrity, the extent of the renovations would require that the building be brought to today's building code standards, which would include, among other things, installing an elevator, wider doorways, and horizontal-circulation corridors. These additions would significantly increase the cost of the renovation project.

"I would have a hard time recommending to leadership to make the investment in the facility to renew it," Amster said

in an interview with *The Tech*.

Amster explained that, unlike Random Hall — a building that also received repairs this summer, but reopened at the start of term — Bexley Hall was in much worse shape. Bexley was checked last spring as a part of the Accelerated Capital Renewal program that was inspecting the facades of all the brick buildings on campus. After Facilities found several concerning structural issues, they sought outside guidance on how to proceed. Two engineering reports and a recommendation from a structural engineer later, Facilities recommended to the Division of Student life to close and renovate Bexley after commencement 2013.

While Facilities has been assessing Bexley, they have met four times with the Bexley ad-

Bexley, Page 15



MELISSA RENÉE SCHUMACHER—THE TECH

Paola Cappellaro (left), an associate professor in the Department of Nuclear Science and Engineering and Susan J. Hockfield (right), the former President of MIT, share insights during an interdisciplinary panel on women in academia. Hosted by Undergraduate Women in Physics on Wednesday evening in 10-250, the panel featured four female professors and was held in honor of Professor Dresselhaus's contributions to women and junior faculty.

Life explained differently: two new intro biology classes

7.015 and 7.016 added to the slate of biology GIRs to contrast and relieve classic 7.012

By Kath Xu
ASSOCIATE NEWS EDITOR

The biology department launched two new introductory biology classes this term, 7.015 and 7.016, bringing the total number of introductory biology classes to five. 7.015 is the first intro biology class to cater towards students who come from a stronger biology background and 7.016 is the first to focus more on biochemistry than the other 7.01x classes. 7.015 also incorporates discussion-based recitations and guest lectures, in contrast to the standard lecture format of the other 7.01x

classes.

After last year's 7.012 over enrollment (hitting 835 students), the new 7.016 course eased the class size, taking in 325 students. Currently, 7.012 is capped at 550 enrolled students while 7.016 has 40 students.

All five intro biology courses (7.012, 7.013, 7.014, 7.015, and 7.016) share a common curriculum core that makes up approximately 50 percent of each class. Previously, the only intro biology class offered in the Fall was 7.012, while 7.013 and 7.014 were offered in the spring. According to MIT's subject listing, 7.012 emphasizes a genetic approach to

biology, 7.013 focuses on human biology, and 7.014 specializes in ecology and biogeochemical cycles.

7.015

When MIT stopped accepting AP Biology credit as a substitute for the biology General Institute Requirement (GIR) in 2007, there were no plans at the time to offer a different version of the GIR for those who had taken advanced biology courses in high school. According to 7.015 instructor Dr. Leah Okumura, 7.015 is the department's attempt to "really provide something extra for students who have already

taken a good amount of biology in high school." 7.015 has a different class structure from the standard 7.012 format. About half of the recitations are also discussion-based and the class hosts guests lecturers. To make up for having fewer midterms and problem sets (7.015 has 2 midterms and 4 problem sets instead of the usual 3 and 7), 7.015 has extra readings, discussions, and writing assignments.

"We prefer to call it the enriched version [of intro biology]," she said. "It's not necessarily more advanced, but we use different curriculum materials and a different strategy for

teaching biology."

Kathryn M. Farris '17 said she enjoyed the new spin on the core curriculum.

"I was attracted to 7.015 because I felt like it offered a more current, real-life approach to biology, which sounded a lot more interesting to me," Farris said. "I think one of the best parts about it is that the TAs and professors are all really open to feedback from us (the students) as to how we can improve the structure and pacing of class."

Luisa R. Kenausius '17 added,

Biology, Page 16

New office for green MIT

Director is from Yale sustainability office

By Omar Ibarra
STAFF REPORTER

After years of experience in the field of campus sustainability, Julie Newman will take on a role as the first director of MIT's new Office of Sustainability.

The Office of Sustainability was created in mid-August by MIT Executive Vice President Israel Ruiz, and currently consists of a three-person staff of Newman, Steven M. Lanou and Susy Jones. Newman's position was created to address ecological, economic and social equity problems and provide effective solutions. This includes but is not limited to issues such as water, waste, and energy management.

"As director, my role is to build upon an already existing foundation of MIT's commitment to sustainability," said Newman.

Newman sees her role as threefold. First is her commit-

ment to focusing on the operational campus system. "I need to know how to integrate sustainability across all our operational systems across campus," she said.

From there, Newman plans to engage the MIT community, and lastly, to develop partnerships within the university, across the cities of Boston and Cambridge, and beyond. Despite the small size, Newman is confident that the office will have a significant impact.

After earning her PhD from Tufts University in 1995, Newman went on to begin work in campus sustainability, eventually becoming the founding director of the Office of Sustainability at Yale University. "We established a very robust roadmap that cut across all operational divisions of the university," she said.

While she enjoyed success

Sustainability, Page 17

MIT fined for emissions

Cogen violations cost Institute \$15,000

By Rosa Ruiz

Following a review of 2012 emissions records and an inspection of MIT's power plant on Vassar Street, the Massachusetts Department of Environmental Protection (MassDEP) fined MIT \$15,000 for violations in the monitoring of emissions.

Although the infractions occurred during 2010 and 2011, they were not discovered until MassDEP reviewed 2012 reports and inspected the MIT plant site, examining the plant's emergency generators, boilers, and exhaust stacks.

"The inability to adequately monitor the facility's air quality emissions, in a manner that is consistent with its operating permit, is unacceptable," said Eric Worrall, acting Regional Director of MassDEP's Northeast Regional Office.

MassDEP discovered that the

plant had been emitting overly opaque emissions, as well as too much carbon monoxide. In addition, the plant's systems responsible for monitoring carbon monoxide and nitrogen oxides emissions and analyzing opacity were found to have unsafe amounts of downtime.

"MIT is committed to maintaining a green campus and clean air emissions are an important part of that effort. We are working with the Massachusetts Department of Environmental Protection to ensure our Central Utilities Plant meets or exceeds the standards specified in our air permits," said William Van-Schalkwyk, managing director of the Environment, Health, and Safety Office at MIT.

The Vassar Street plant, the William R. Dickson Cogeneration Facility, has been supplying

Air quality, Page 18

IN SHORT

Economist and MIT alumnus Robert J. Shiller PhD '72 won the 2013 Nobel Prize in economic sciences for his empirical analysis of asset prices. Shiller, currently a Sterling Professor of Economics at Yale University, will share the award with Eugene F. Fama and Lars Peter Hansen of University of Chicago.

Interested in study abroad? The Cambridge-MIT Exchange (CME) info session is Monday 5:15 p.m. – 6:30 p.m. in 4-149. A China Study and Intern Abroad info session is Tuesday 5:15 p.m.–6:30 p.m. in 1-277.

Interested in the MIT IDEAS Global Challenge? The deadline for the first chance to submit a Scope Statement is Thursday, Oct. 24 by 11:59 p.m. For more information, visit <http://globalchallenge.mit.edu/competition/how-to-enter>.

Send news information and tips to news@tech.mit.edu.

I'M A FUNNY GUY, I SWEAR

Seriously, I came up with these jokes all by myself!

FUN, p. 7

IN-CLASS BRAINSTORMING

What's the real purpose of throwing out product ideas during class? FUN, p. 6

MY COMPUTER IS MY ENABLER

What can I do without it? FUN, p. 6



FROM ITALY TO KRESGE

La Scala Chamber Orchestra performs Fantasies from Verdi's Operas at MIT. ARTS, p. 13

CONCERT: A TASTE OF MITSO

MITSO presented its first concert of the semester last Saturday. ARTS, p. 10

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Israel-Turkey ties strained by reports of spy exposure

By Isabel Kershner
THE NEW YORK TIMES

JERUSALEM — Persistently strained relations between Israel and Turkey have not been helped by a report that, last year, Turkey revealed to Iran the identities of up to 10 Iranians who had spied for Israel.

The Israeli government would not comment Thursday on the report, but Danny Yatom, a former chief of Mossad, Israel's intelligence agency, told Israel Radio, "Assuming that this is true, this was an extraordinarily malicious thing to do."

A column published Wednesday on The Washington Post's website reported that, in early 2012, the Turkish government made the disclosures about Iranians who had been meeting Israeli intelligence officers on Turkish soil. The column, by David Ignatius, said that "knowledgeable sources" called the episode a "significant" loss of intelligence and "an effort to slap at the Israelis," and that the betrayal had marred a 50-year intelligence alli-

ance between Turkey and Israel.

The Turkish foreign minister, Ahmet Davutoglu, said, in televised remarks Thursday, that the allegations in the column were "without any foundation."

Turkey, which shares borders with Iran, Iraq, and Syria, among other countries, once served as "a convenient place for Israel to work to reach people from hostile countries," Yatom said. But while there had been "outstanding" cooperation in earlier years between Israel and Turkey, Israel now is "not open with the Turks, as we were in the past," Yatom said.

He added, "We are suspicious of the Turks, that they relay information to Iran that could endanger us."

Turkey once ranked as Israel's closest ally in the Muslim world; it took part in joint exercises in the Mediterranean with the Israeli and U.S. navies, and allowed Israeli jet pilots to train in Turkey's relatively vast airspace.

But relations began to sour over Israel's deadly three-week offensive against the Hamas militant group controlling Gaza in the winter of

2008-2009. The strategic partnership weakened further in May 2010, when Israeli commandos met resistance when boarding ships seeking to break the Israeli naval blockade of Gaza, and eight Turks and an American of Turkish descent were killed. Turkey sharply downgraded its diplomatic and military ties with Israel in September 2011, expelling the Israeli ambassador after Israel refused to apologize for the deaths.

In December 2011, Israel canceled a \$141 million contract to supply Turkey with an advanced aerial intelligence system. An Israeli official said, at the time, that the reason was Turkey's shifting allegiances in a turbulent region, which led Israel to fear that the delicate technology could end up in the hands of hostile governments, like that of Iran.

With Syria's descent into a civil war underlining the enduring interests shared by Israel and Turkey, the United States urged these two important U.S. allies to restore cooperation. When President Barack Obama visited Israel in March, he brokered a reconciliation agreement.

Oil companies are sued in waste of natural gas

By Clifford Krauss
THE NEW YORK TIMES

HOUSTON — In the sharpest challenge yet to the surge in flaring of natural gas in the Bakken shale oil field, North Dakota mineral owners this week filed 10 class-action lawsuits seeking millions of dollars in lost royalties from some of the nation's largest oil companies.

Roughly 1,500 fires burn above western North Dakota because of the deliberate burning of natural gas by companies rushing to drill for oil without having sufficient pipelines to transport their production. With cheap gas bubbling to the top with expensive oil, the companies do not have an economic incentive to build the necessary gas pipelines, so they flare the excess gas instead.

Flaring is environmentally less harmful than releasing raw natural gas into the atmosphere, but the flared gas still spews climate-warming carbon dioxide into the

atmosphere. The quantities of gas burned are so large that the fires rising above wheat and sunflower fields look like a small city in NASA photographs taken from satellites.

Flared gas has nearly tripled in the last two years in North Dakota, with almost 30 percent of the output in the state burned at wells, producing emissions equivalent to more than two medium-size coal-fired power plants.

The value of flared gas in the state is roughly \$100 million a month, leading property owners who lease their lands to the oil companies to believe they are losing money even though they are earning increasing royalties from the fast expansion of oil production in North Dakota. Oil output has risen by 100,000 barrels a day since May alone.

"The lawsuits seek to force operators to comply with state law and pay royalties to mineral owners on the value of flared gas," according to a statement released Wednesday

by one of five law firms that filed the suits, "and by so doing create a compelling economic incentive for producers to reduce and eliminate the wasteful practice of flaring."

Companies being sued include Continental Resources, XTO Energy, SM Energy and Marathon Oil.

North Dakota regulators allow companies to seek exemptions for flaring as they connect their wells to gas-gathering lines, but the suits accuse the companies of violating deadlines and other limitations.

Oil companies and their local trade association say they are working as fast as possible to build pipelines, and they note that the companies now flare about 29 percent of the gas they produce, compared with 36 percent in September 2011.

Companies belonging to the North Dakota Petroleum Council announced the formation of a task force this week to increase efforts to reduce flaring. The group is expected to present a report by the end of the year.

Google results top Wall Street expectations

By Claire Cain Miller
THE NEW YORK TIMES

SAN FRANCISCO — For more than a decade, Google's search ad business has seemed almost magical in its ability to mint money.

But the magic is beginning to wear off, as changing digital behavior on mobile phones and even on desktops threatens Google's main business.

The company pleased analysts and shareholders when it announced better-than-expected third-quarter financial results Thursday. Still, the report revealed that, as its desktop search business matures, the price that advertisers pay when they click on ads has continued to fall.

"Google's core desktop search business was probably the best Internet business ever created," said Jordan Rohan, an Internet analyst at Stifel Nicolaus. "Every other business they're in, whether it be

mobile search or tablet computers or YouTube, just doesn't look as good from a margin perspective."

Google's core business, selling ads on Google.com and other sites its owns, increased 22 percent year over year. It is a notable rate after four quarters of sub-20 percent growth, although still lower than the 35 percent growth rates of two years ago. The price, too, that advertisers pay each time someone clicks on an ad decreased for the eighth quarter in a row, according to data collected by BGC Partners. It fell 8 percent from the same period last year, largely because mobile ads cost less than desktop ones.

"Google makes 90 percent of its money in the Web world, and it's in the wrong place," said George Colony, the chief executive of Forrester Research.

Google reported third-quarter revenue of \$14.89 billion, up 12 percent from a year ago. Net revenue, which excludes payments to

ad partners, was \$11.92 billion, up from \$11.33 billion. Net income rose to \$2.97 billion, or \$8.75 a share, from \$2.18 billion, or \$6.53 a share. Excluding the cost of stock options, Google's third-quarter profit was \$10.74 a share.

The results exceeded the expectations of analysts, who had predicted revenue of \$14.82 billion and earnings, excluding the cost of stock options, of \$10.35 a share. Analysts said they had given more conservative estimates this quarter, because they had an increasingly negative sentiment about Google after several quarters in which its results did not live up to their expectations.

Shares jumped more than 6 percent in after-hours trading.

Included in the results was a \$248 million operating loss at Motorola Mobility. Google has drastically cut costs at Motorola and introduced the Moto X phone, but its losses are expanding.

Decline in revenue at Goldman Sachs raises concerns

Among Goldman Sachs employees, the chatter started months ago that 2013 was going to be a good bonus year. The Wall Street bank began the year strong, and despite concerns about the economy, its profit doubled over year-ago levels in the second quarter.

These hopes were all but dashed Thursday when the firm announced that revenue in its fixed-income, currency and commodities division, a powerful unit that in better years has produced more than 35 percent of Goldman's entire revenue, dropped 44 percent from year-ago levels.

The weakness in this division has led to renewed concerns from analysts and investors about the headwinds Goldman and other banks are facing in big money-producing areas like the trading of interest rate products and currencies. There is some concern that the pull back is not short term and could be the new normal.

On Thursday, Goldman faced a number of questions on the revenue decline during a call with analysts. Analysts pushed, without much success, for more details on the reasons behind the drop in revenue for the unit. They also pressed executives about their expectations for the firm's return on equity, which effectively measures the profit a bank is able to generate on its capital. That return is hovering around 8 percent on an annualized basis, significantly lower than it has been in previous years, and well below the company's previously stated goal of 20 percent over time.

By slashing what it sets aside for compensation, Goldman was able to post a decent third-quarter profit, despite the revenue weakness. Quarterly earnings came in at \$1.52 billion Thursday, largely flat compared with the period a year earlier.

Its profit of \$2.88 a share managed to slightly exceed its performance of \$2.85 a share in the third quarter of 2012. And earnings were well ahead of expectations of \$2.43 a share, according to analysts polled by Thomson Reuters. But revenue in the quarter fell about 20 percent, to \$6.72 billion, well below analyst forecasts of \$7.36 billion.

Goldman shares fell 2.4 percent Thursday to close at \$158.32.

—Susanne Craig and Peter Eavis, *The New York Times*

Syrian official says peace talks could resume in November

LONDON — A Syrian government official said Thursday that long-postponed peace talks under international auspices — known in diplomatic shorthand as Geneva II — could be held in late November, raising speculation about who would attend and who would represent the fractured Syrian opposition, which is seeking to topple President Bashar Assad.

The official, Qadri Jamil, a deputy prime minister, said in Moscow that the discussions could be held in Geneva on Nov. 23, according to SANA, the official Syrian news agency. Some reports from Moscow quoted him as saying the talks could extend into Nov. 24. His remarks were the first to publicly mention a specific date.

Diplomacy surrounding Syria has gathered pace since September, when Russia and the United States brokered a deal for the Syrian government to give up its chemical weapons. But as the fighting continues, the question of which countries and which Syrian factions would take part in new talks remained unanswered.

At the United Nations, Martin Nesirky, a spokesman for Secretary-General Ban Ki-moon, said he could not confirm the dates mentioned by Jamil, and hinted that talk of a date was premature.

"When it is time for an announcement, the secretary-general will make one," Nesirky said.

Russia, a key backer of the Syrian government, also indicated that there was no deal on the talks. Reuters quoted Russia's Foreign Ministry spokesman, Alexander Lukashevich, as telling reporters, "We shouldn't get ahead of ourselves."

The SANA agency said Jamil spoke Thursday after talks with Russia's Middle East envoy, Mikhail Bogdanov, which the agency said were fruitful.

In the first round of discussions in Geneva in June 2012, major world powers failed to reach a consensus on the key question of whether to call for the ouster of Assad. The nine nations at the meeting agreed instead on a plan for a political transition in Syria, with Russia and China blocking attempts by other participants to require Assad's removal from power.

—Alan Cowell, *The New York Times*

Europe moves to shield citizens' data

BRUSSELS — Lawmakers here have introduced a measure in the European Parliament that could require U.S. companies like Google and Yahoo to seek clearance from European officials before complying with U.S. warrants seeking private data.

The measure, an amendment to a broader electronic privacy law pending in Parliament, is a response to Prism, the secret spying program led by the National Security Agency that came to light in June. Europeans were outraged by the revelations that some of the biggest U.S. Internet companies, many of whose users live in Europe, were required by the U.S. authorities to share information in email, Web searches and other online data.

Parliament's Committee on Civil Liberties, Justice and Home Affairs may vote on the amendment as soon as Monday, said Jan Philipp Albrecht, the German member who is responsible for steering the legislation through the Parliament. His office later clarified that the vote could be delayed until Thursday. Once it wins approval by the committee, Albrecht may begin negotiations on the Parliament's behalf with European governments, which are discussing their own version of new privacy rules.

The measure would obligate companies not based in the EU to nonetheless comply with European data protection rules if they operate in Europe. Violators could face fines of as much as 5 percent of a company's global annual revenue.

The amendment would require companies to seek approval from a "supervisory authority" in a bloc country before transferring data on a person's individual electronic communications, whether phone calls, emails, Web searches or social media interactions, outside the union at the request of a foreign government or court.

—James Kanter, *The New York Times*

WORLD&NATION WORLD&NATION WORLD&NATION WORLD&NATION WORLD

Political climate before shutdown ended was volatile

But Americans mostly want a fair and more just system

Shutdown, from Page 4

that a large majority of Americans did not want Republicans to do this and blame them for the current mess. This is not due to “liberal media bias,” no matter how long Fox News and its friends cling to that delusion. It’s due to common-sense reading of the current situation.

Do we all really need to be reminded that the current shutdown occurred four years after the health care law was passed, two years after it was reviewed and upheld by the Supreme Court, and almost one year since the president’s reelection? And that the same election also saw the Republicans’ failure to take control of the Senate, despite massive spending to do so and a lopsided number of Democratic seats up for grabs? If the 2012 election was in part a referendum on the health care law (although this is an uncertain point at best), then the law was surely vindicated. Moreover, there are probably many Americans who do need reminding that a one-year delay in implementation of

the small-business portion of the law has already been put into effect. Over the past few years there have been other compromises or alterations of what was originally hoped for, to placate different constituencies, right and left. The White House, if anything, has been too eager to negotiate in the past.

Furthermore, if Republicans were truly serious about wanting to negotiate over problems in the law, why have none of them put forward a bill giving a slate of particular reforms or changes? It would be much more reasonable for both sides to wait a year to see how the law does and does not work. Then, the parties might sit down and “negotiate” improvements. For far too many Republicans, the issue keeps coming down to doing away with the law, but without any clear alternative offered in its place, save for some sort of vague return to the status quo ante. (This would bring us back to the time when health costs continually skyrocketed, before the new law was passed.)

I suspect that much of the current

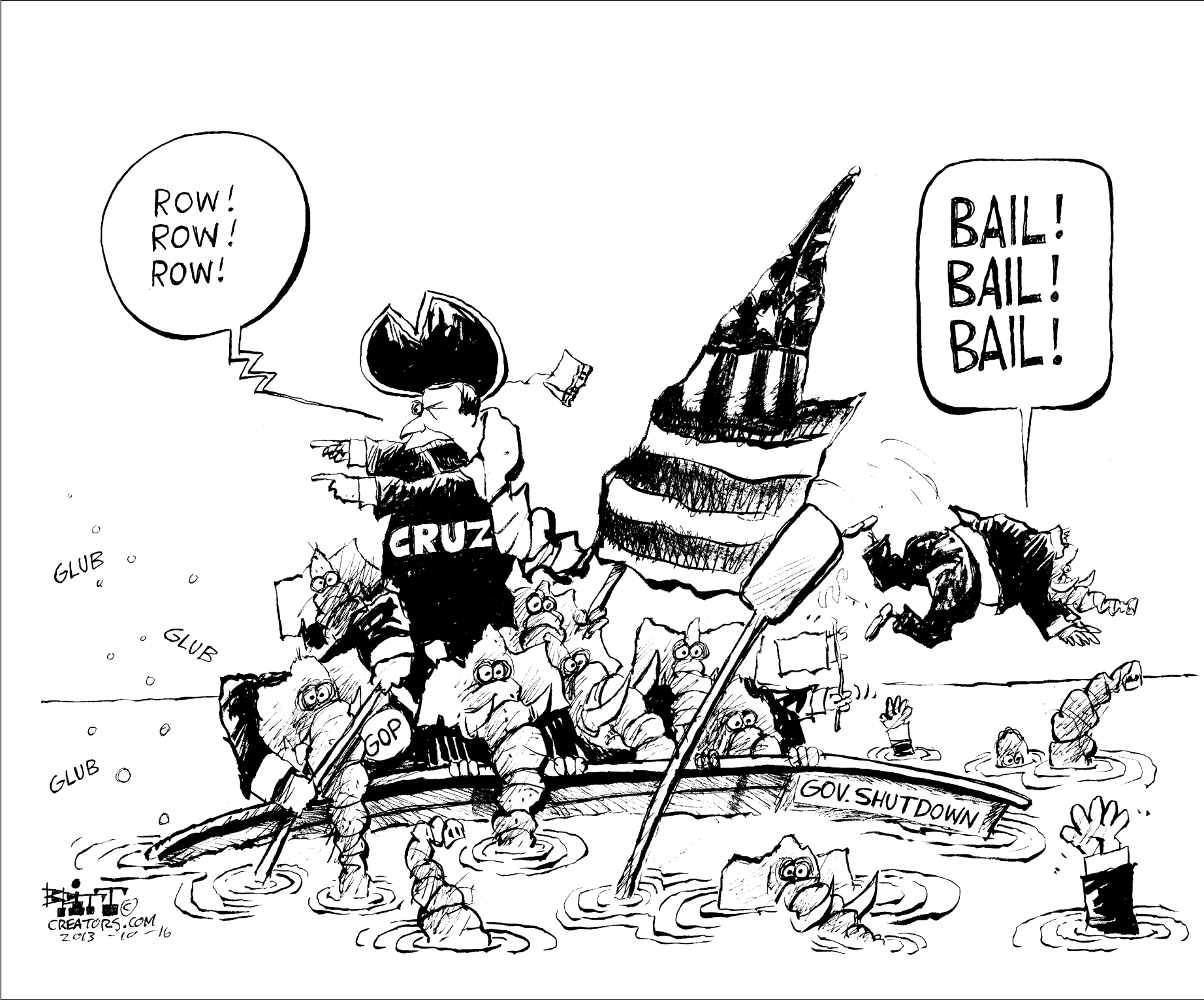
Republican obstructionism has to do with a deep-seated fear that the law will indeed prove be an improvement over the current system, and that Americans will gradually come to take it for granted as much as they now do Social Security and Medicare. If so, Republicans will surely come to regret having labeled the law “Obamacare,” because it will redound to his credit. Once upon a time, Romney was praised for supporting such an initiative in our state, and his political fortunes rose. Has Massachusetts suffered dire consequences because of its health care law? Have our premiums soared because of it? Surely many Republicans are aware of this and wonder if they can stop the law from succeeding, except by dismantling it altogether. But whatever the basis for their fear, it seems to be a “non-negotiable” feeling that reasonable people can’t seem to fathom.

“For Me but Not for Thee” sounds like a great “mantra” to pin on Democrats. But it’s sophistry. What I and many Americans want is a system that is more fair and more

just — “For you and for me, for one and for all.” Yes we are impassioned, but we are neither hypocritical, whiny, nor unreasonable. We are certainly willing to pay a little more in taxes, if that’s what is required to forestall excessive increases in the national debt, so long as the wealthy also be called upon to contribute more. (For the sake of keeping my letter from becoming way too long, I have left the debt issue out of this discussion, even though it is another key component in the current political crisis.)

We are not the ones who have repeatedly threatened to shut down the political process and to rupture the financial mechanisms underpinning our economy, just to insist we get our way. Nor do we lose hope that eventually a better way of doing things can be negotiated — despite the continual effort of far too many Republicans over the past several years to hold our entire political system hostage to its unclear, ever-escalating and fundamentally regressive demands.

Martin Marks is a Senior Lecturer in the department of Music and Theater Arts



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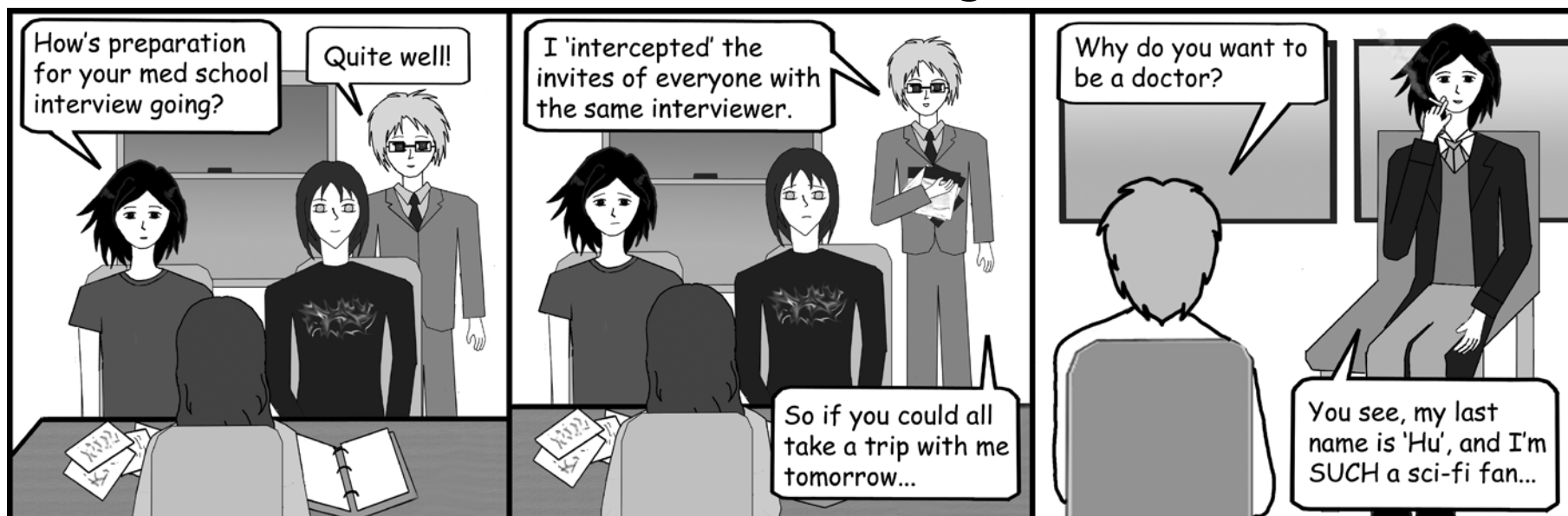
UPPERCUT

by Steve Sullivan



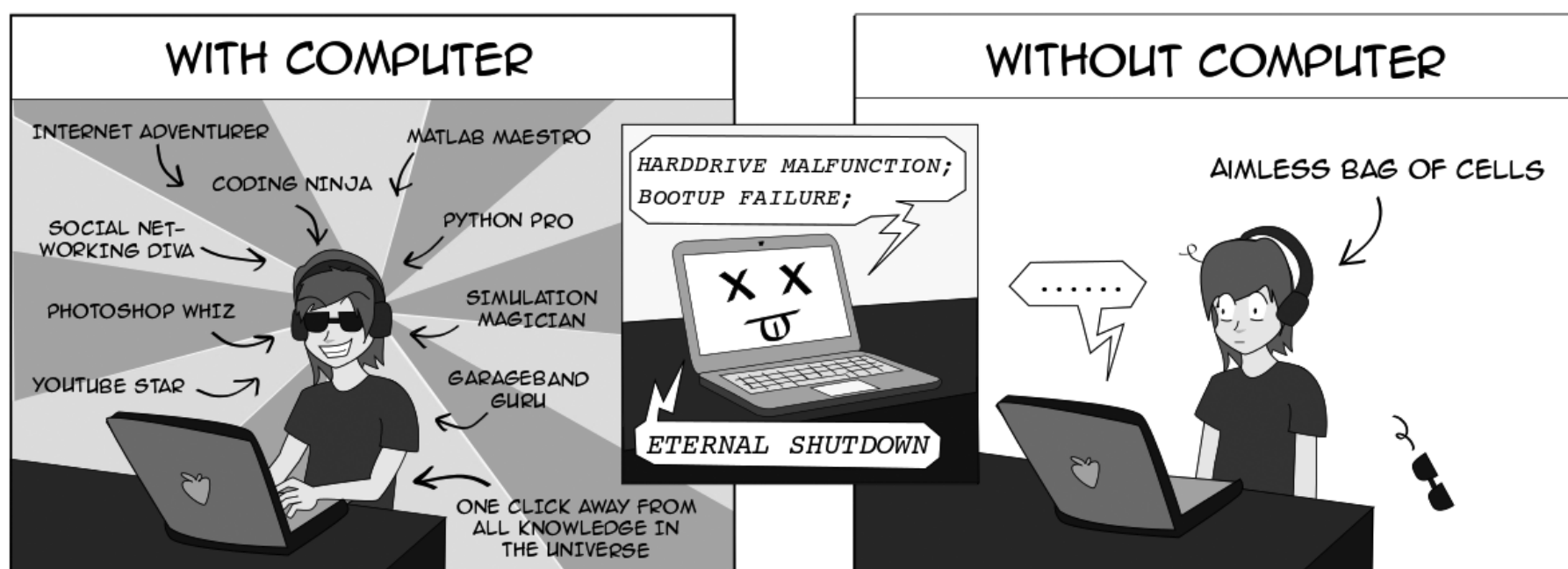
Somewhere in the Search for Meaning

by Letitia Li



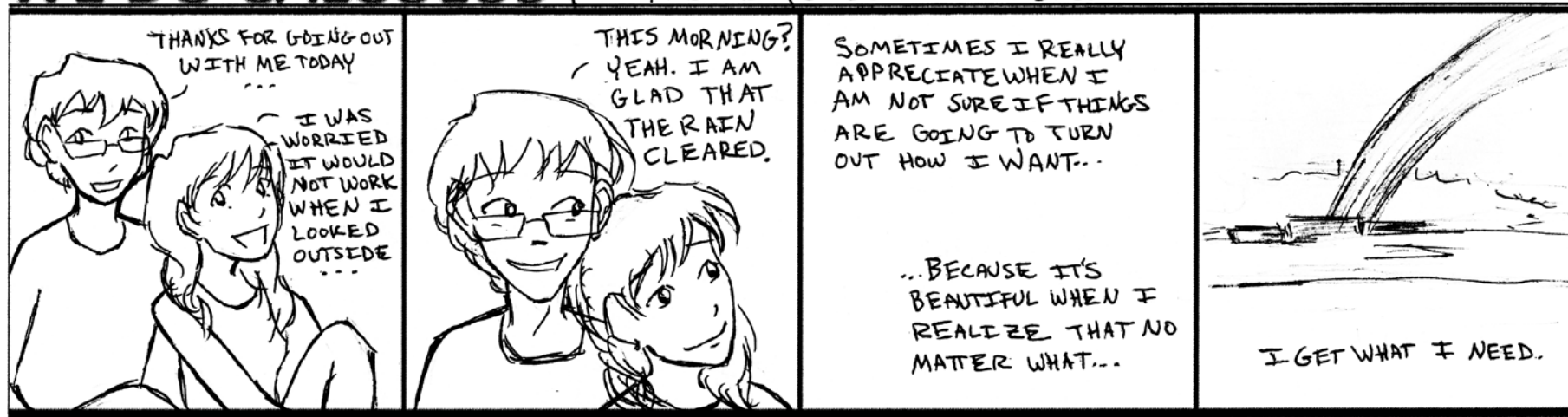
Q.E.D. (QUITE EASILY DONE)

BY ERIKA TRENT



WE DO CALCULUS BY PAUL R. POWELL

October '13



Techdoku II

Solution, page 19

| | | | | | |
|-----|-----|------|----|-----|----|
| 6× | 80× | | | 30× | 2÷ |
| | | 30× | 1− | | |
| 18× | | | | 24× | |
| 5 | | 180× | | | 4 |
| 4 | | 2 | | 3× | |
| 48× | | | | 15× | |

Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–6. Follow the mathematical operations for each box.

Techdoku III

Solution, page 19

| | | | | | |
|------|----|------|-----|----|-----|
| 180× | | | 72× | | |
| | 2× | 4 | | 4− | |
| 2 | | 360× | | | 6 |
| 36× | | | 4 | | 20× |
| | 9+ | 8+ | | | |
| 5 | | 6 | | 3× | |

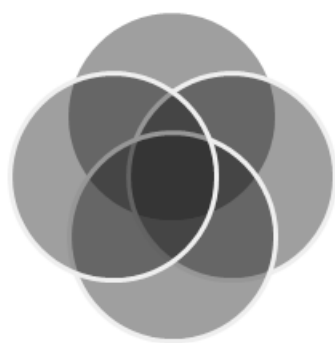
Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–6. Follow the mathematical operations for each box.

Techdoku IV

Solution, page 19

| | | | | | | | | |
|-----|------|-----|------|-----|-----|------|----|---|
| 24+ | | | | 12× | | 378× | | |
| 10× | | 21+ | | 9 | | 1− | | |
| | 24+ | | 22+ | | 6 | | 1− | |
| | | 8+ | 30× | | 14+ | | 8− | |
| 18× | | | | | 8 | | | 5 |
| | 3 | | 216× | | | 20+ | | |
| 16+ | 288× | | | | 2− | | 5− | |
| | 4 | | 16× | | | 3− | | 9 |
| 12× | | | 7 | | 14+ | | 8+ | |

Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–6. Follow the mathematical operations for each box.



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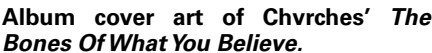
four.mit.edu | four-exec@mit.edu

CHVRCHES delivers a solid debut album

Lauren Mayberry, Ian Cook and Martin Doherty, otherwise known as the Glasgow-based synth-pop band CHVRCHES, have entered the music scene with quite a fanfare. After the relatively unrecognized premiere release of their singles “Lies” and “The Mother We Share” in 2012, the band suddenly took over headlines in early 2013. BBC ranked them fifth in their poll “Sound of 2013,” after which the band released their EP *Recover* to positive critic reviews, and within a few months CHVRCHES were already touring around the world.

Although the three Scots do not come from similar musical backgrounds (all three of them were involved in different musical projects prior to forming CHVRCHES), they are very specific about the type of music they make together: dance and synth-pop. Their debut album *The Bones of What You Believe* could easily be described in terms of these two genres, but it would be unfair to disregard the nuanced complexity and unique sound expressed in their songs. The closest reference to the specificity of their sound would be Depeche Mode — there is a prevalence of the Depeche-like psychedelic synth-pop, but at the same time CHVRCHES also instill an observable sense of upbeat melodies and dance floor-oriented beats. This nuanced complexity stems from two unique factors: highly-polished production, and Mayberry's unique voice.

The album's first track, "The Mother We Share," gives a great overture to the album and exposes the brilliance of the album's production. The verses and chorus of the song exchange in an interplay of slow buildup and upbeat, fast-flowing lyrics "I'm in misery where you can seem as old as your omens / And the mother we share will never keep your proud head from falling". The well-defined production is easily seen in these outbursts of rhythmical choruses, but the most meticulous efforts of production are showcased in the smallest details. "Recover", for example, dives in a few seconds of silence after the chorus, but with careful attention one can notice that the silence is supported by pulsating



sounds that resemble those of sonar. A small detail like this one seems insignificant, but these subtle sounds infuse the song's feeling of insecurity and vulnerability even into the post-chorus silence. "Night Sky," one of the album's most successful tracks, is another result of careful attention to detail — the nocturnal and introspective quality of the song is achieved through variations of opening lullaby-like tones.

Her voice, colored with feelings of inherent innocence and acquired maturity, gives a lively twist to the psychedelic flavor of the album.

While it seems unjust to give disproportional credit to the band members, Mayberry undoubtedly makes up the essence of CHVRCHES. Her voice, colored with feelings of inherent innocence and acquired maturity, gives a lively twist to the psychedelic flavor of the album. The chorus of "Lies" opens with the lyrics "I can sell you lies / You can't get enough / Make a true believer of / Anyone, anyone, anyone", which might sound like a worrisome depiction of Mayberry's deception abili-

★★★★★

The Bones of What You Believe

CHVRCHES

Virgin Records

Released Sept. 20, 2013

ties, but when they are represented by her voice, the image of deception is replaced by the one of forgivable mischievousness. Similarly, "Under the Tide" starts off with Martin Doherty building the musical core of the song, but it's not until Mayberry comes in with the backing "Oh oh oh" vocals that the chorus picks up the infectious pop motif.

Even though the album loses some of its catchiness and uniqueness in songs like "You Caught the Light" and "Science/Visions," the majority of its songs give enough substance for a strong musical structure. *The Bones of What You Believe* is nothing novel, but it's a fresh and unworn combination of remarkable production, slick melodies, and Mayberry's delicate voice. Its psychedelic tone will not always complement your mood, but when it does, there will be no way to avoid dancing to the synth-pop melodies of Glasgow.

Highlight tracks: "The Mother We Share," "Lies," "Recover," "Night Sky."

Admiring our musical peers

MITSO's first performance of the year

Last semester, I went to my first MITSO concert to write a report for 21M.011 Introduction to Western Music. I remember enjoying the concert very much and wishing that I had known about MITSO performances earlier. Since I had somewhat put western classical music in the back of my mind, I decided to start off my Columbus

found this piece to be quite forgettable.

Before the start of the second piece, the conductor Adam Boyles introduced himself and the orchestra. He then gave the audience some background on the Brahms piece, noting that it was actually only a librarian's guess that Haydn had composed the theme from which the variations are based. Nowadays, this piece is commonly known as *St. Anthony Variations* to avoid

The highlight of the *Farewell Symphony* came at the end, when urgent and powerful phrases gave way to thinner and thinner sounds, until even the conductor himself walked off the stage to laughter, leaving two violinists to finish the piece.

strokes, the melody was full of emotions and seemed to convey inner feelings about to burst. I was able to follow the structure of this symphony and recognize the transitions between movements, the slow tempo of the second movement, and the dance-like beat of the third movement. Perhaps I still retained some knowledge from music class after all.

As expected, the highlight of the *Farewell Symphony* came at the end, when urgent and powerful phrases gave way to thinner and thinner sounds, until even the conductor himself walked off the stage to laughter, leaving two violinists to finish off an entertaining and exciting piece.

Following a short intermission, the musicians played the main attraction of the concert — *Pictures at an Exhibition* by Modest Mussorgsky, arranged by Maurice Ravel. The piece portrays a walk through an exhibition, interlacing the “promenade” movement with movements that depict the individual pictures by the artist Viktor Hartmann. Having never heard the piece, I did not know what to expect in each movement and found myself on the edge of my seat, following the ups and downs of the performance. Some parts featured prominent percussion sounds that set an ominous tone, while others highlighted instruments such as the flute and the horn. A common theme throughout was the power of the colorful orchestration.

My favorite part of musical performances has always been the visual element, and this concert was no different. Knowing the importance of bow movement synchronization, I paid particularly close attention to the bow movements of the string players,

MIT Symphony Orchestra

Brahms' Variations on a Theme by Joseph Haydn, Opus 56, Haydn's Symphony No. 45 in F-sharp minor (Farewell Symphony), Mussorgsky/Ravel's Pictures at an Exhibition

8 p.m., Saturday, Oct. 12, 2013

Kresge Auditorium

Day Weekend by attending the first MITSO concert of the 2013–2014 season, in hopes of refreshing my musical knowledge. While I was perhaps only partially successful in that regard, the student orchestra was once again nothing short of spectacular.

The first piece was Johannes Brahms' *Variations on a Theme by Haydn, Opus 56*. Not recalling much of what I had learned about themes and variations in music class, I listened to this performance without paying too much attention to structure and specific musical elements. What stood out the most for me was the blending of different instrumental sounds. While this is by no means a characteristic unique to this piece, the use of a wide range of instruments gave the performance an extra dimension. Unfortunately, despite an entertaining finale, I

any confusion. A great storyteller, Boyles moved on to describe the second piece of the concert, *Symphony no. 45 (Farewell)* by Haydn. I learned that this was a piece of protest music that Haydn had composed to hint to his patron that the musicians were tired and wanted to leave. To accomplish this, the symphony deviates from the standard structure of the genre and instead features an *adagio* ending. During this finale, musicians drop out one by one until only two are left. In addition, the conductor pointed out that the string players would hold their bows differently to recreate the effects of playing with shorter bows back when musicians first performed the piece.

When the first movement began, I immediately recognized the strings' recurrent line. Marked by strong and powerful

```
File Edit Options Buffers Tools Im-Python Python Help
import new_skills

def learnMarketableJobSkills():
    return linux, OSX, javascript, applescript, perl, python

if you.interest == True:
    print "E-mail join@tech.mit.edu"

----:----F1 joinTechno.py          (Python)--L1--Top-----
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EXHIBIT REVIEW

'An eagle in a dove-coat'

John Singer Sargent Watercolors opens at the MFA

By Grace Young
ARTS EDITOR

“What if Mick Jagger stopped singing ‘Honky Tonk Woman’?” asked MFA curator Erica Hirshler at the opening of *John Singer Sargent Watercolors*. By 1907, the renowned Gilded Age portraitist John Singer Sargent had effectively abandoned his lucrative career as a portrait artist in favor of landscapes and figure studies in watercolor. It came as a shock to the art world, as if Jagger had given up “Honky Tonk Woman.”

The product of several years work by Hirshler and Brooklyn Museum curator Teresa Carbone, the exhibit features ninety-two watercolors from Sargent's trips through the Mediterranean and the Middle East, including stunning portrayals of Venetian architecture, Bedouin camps, villa gardens, Alpine scenes, and Italian quarries. All the works date from 1902 to 1911, late in Sargent's career.

At the time, the Brooklyn Museum and the MFA were fierce rivals for Sargent's watercolors, aggressively bidding against each other at his 1909 and 1912 exhibits — his only major watercolor exhibitions in the US.

Much to the MFA's chagrin, the Brooklyn Museum purchased the entire contents of the first in 1909. Not to be outdone, the MFA determinedly acquired all the watercolors from his 1912 exhibit. At the time, it was the largest collection of any living painter acquired by the museum.

The turn of the 20th century competition between the museums is certainly a boon for us today. Having conveniently concentrated the bulk of Sargent's watercolors between them, this is the first time the two collections have been exhibited together.

Sargent's confident, bold strokes, loosely defined forms, and unexpected vantage points were contrary to contemporary aesthetic standards that called for carefully delineated landscapes and translucent washes in watercolors. One reviewer proclaimed him "an eagle in a dove-cote," shaking up norms for the medium.

The first part of the exhibit is organized geographically. It starts with watercolors from Venice, one of Sargent's favorite places to work; he painted more watercolors here than anywhere else. Two renderings of the Baroque-style Basilica Santa Maria della Salute hang side by side. Sargent painted both

at the same time, but from different vantage points and using different brushstrokes. One, with tighter, more finished-looking brushstrokes, is from the Brooklyn Museum's collection, and the other, with more blurred forms and blended colors, is from the MFA's collection.

Sargent's watercolors from the Middle East dominate the next room. Traveling without the usual entourage of family and friends, he began by visiting popular Biblical tourist sights, but found more artistic inspiration west of the Jordan River among the Bedouin natives. In his iconic *Bedouins*, depicting two Bedouin men staring intimately at the artist, he carefully renders their facial expressions and the folds in their garments, but leaves the scenery and lower quarter of the painting seemingly unfinished. *Bedouins*, and his other watercolors from the region, stood out from those by other Western artists in that they do not portray the "middle eastern dystopia" (Jean-Léon Gérôme's *The Snake Charmer* et al.).

Thereafter, the exhibit is organized by theme. Another room contains figures lying down. Sargent depicts his sister after a strenuous mountain hike and his friends dressed in Palestinian outfits in the Swiss Alps. Clearly Sargent was fascinated by white-on-white watercolor; something I imagine he took as a technical challenge. The cover painting of the exhibit, *Simplon Pass: Reading*, shows the young woman's white skirt comprising two thirds of the composition. In others, the ladies' skirts make a landscape of their own, with folds that echo the rolling grassy hills and mountain range.

Sargent was also keen to capture light on different surfaces. Hanging next to each other are an oil painting and watercolor of a babbling brook that he painted the same afternoon (*Val d'Aosta, A Stream over Rocks*). Sargent was unique in his time for treating watercolor not just as a preliminary medium for oil paintings, but as final works in their own right. *Val d'Aosta* was contemporary with Monet's *Water Lilies* and the exhibit helpfully hangs a small picture of Monet's piece next to Sargent's work for comparison.

Other themes in the following rooms include light on stone, watercraft, and Italian

John Singer Sargent
Watercolors

Museum of Fine Arts Boston

Through Jan. 20, 2014

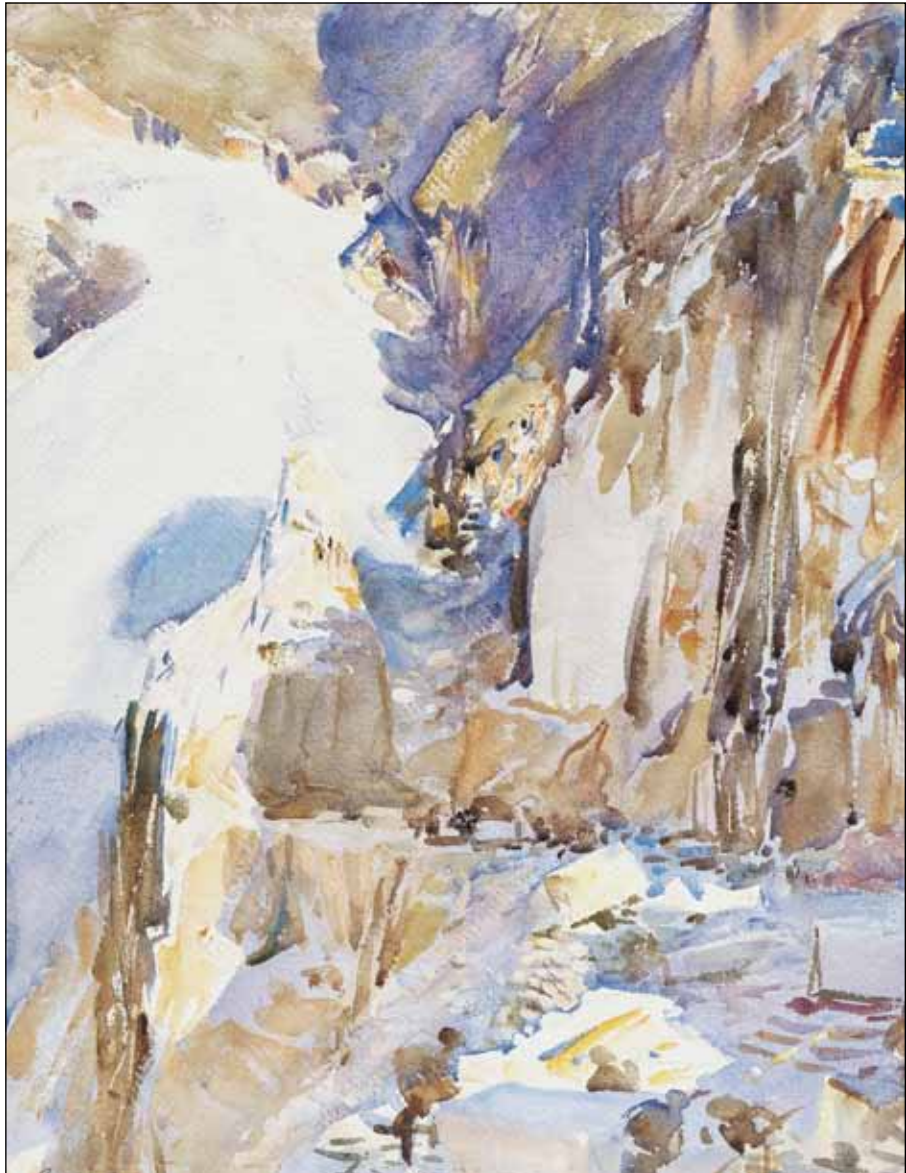
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gardens. His watercolors from the quarries of Carrara, a source of fine sculpture marble since ancient times, border on the abstract, highlighting the light and edges in the scenery. The quarries were certainly not a tourist destination. Hirshler explains "Sargent didn't paint to travel, but rather traveled to paint."

Although Sargent was bored and frustrated with the formulaic portraiture he created for wealthy patrons ("swagger portraits," as one reviewer called them), there are still some portraits in his watercolor exhibit, albeit of a different character. *A Tramp* shows a vagrant, up close, staring intently at the viewer. Sargent depicts his subject with care and beauty but without the costume and definitely without the "swagger." It hangs across the room from *The Cashmere Shawl*, which is closer to his traditional portraiture, and shows a tall, confident woman in front of a rusticated wall, wrapped in an exquisite shawl.

The exhibit also contains a few selected watercolors by Sargent's friend Edward Darley Boit in a "learning gallery," followed by a film of an artist recreating Sargent's *White Ships*. In addition, the MFA is hosting painting classes in Sargent's style along with gallery talks throughout the exhibit's tenure.

Hirshler says she hopes the exhibit will inspire visitors to tune into sunlight a little differently; she hopes we'll notice it on stones, columns, homes, and gardens with a fresh perspective. Certainly the exhibit did that for me. It also gave me a greater appreciation for Sargent's artistic courage, and made me feel like an intimate fellow traveler on his artistic journeys.



COURTESY OF THE BROOKLYN MUSEUM & MUSEUM OF FINE ARTS, BOSTON

Carrara: A Quarry (1911), one of many watercolors from Sargent's travels to the quarry in Italy; it shows his fascination with light on stone.



COURTESY OF THE BROOKLYN MUSEUM & MUSEUM OF FINE ARTS, BOSTON

Santa Maria della Salute (1904) from Sargent's travels in Venice. On loan from the Brooklyn Museum, the painting hangs next to his watercolor of the same church from the MFA's collection.



COURTESY OF THE BROOKLYN MUSEUM & MUSEUM OF FINE ARTS, BOSTON

Bedouins (1905-1906) from Sargent's travels in the Middle East and North Africa.

INTERVIEW

Overcoming failure to succeed, Pixar-style

The Tech talks to the producer of *Monsters University*

By Karleigh Moore

Last Friday, I had the opportunity to interview Kori Rae, a producer from Pixar, about the upcoming DVD and Blu-ray release of *Monsters University*. Rae has been working at Pixar since 1993, and has contributed to films such as *A Bug's Life*, *Toy Story 2*, *Monsters Inc.*, *Up*, *The Incredibles* and *Monsters University*.

When asked “what exactly does a producer do?”, Rae provided insight into the role of a producer in an animation studio. She spends most of her days going to meetings, solving creative problems, and making sure that the director’s vision is translated and incorporated into the film. She says that sometimes even the directors don’t know exactly what they want, and it is her job to help them figure it out. Before her time at Pixar, Rae wanted to play basketball and eventually coach, but her dream fell out of reach when she got injured in college. However, she never lost her love for the game and was able to keep her dream of coaching alive, just not in the way she expected — instead of managing a dozen basketball players, she directs a crew of more than 250 members, and she says the same skills are required for both. She has to get everyone to work together, honing individuals’ skills to accomplish a greater goal: a successful animation film.

You may be wondering, “What exactly is *Monsters University* about?” In a more obvious sense, *Monsters University* is the prequel to 2001’s hit movie *Monsters Inc.* Upon my first viewing of the movie, it never occurred to me that creating a prequel would be too difficult, but Rae went on to say that this was not the case. Creating a story when the ending is already known (Mike and Sully go on to be best friends working at Monsters Inc.) is actually quite a challenge.

Pixar had the task of formulating a story that wouldn't be predictable or redundant, but that would add to the life of the characters, helping to further flesh them out. In order to best do this, Pixar chose to tell the story through Mike. Rae mentioned that it is typical for studios to start out by making several versions of a movie, so in this case, maybe a couple of versions from Mike's perspective that diverge in the middle, and a few told in Sully's perspective that have different endings. Only by doing this can the team make a final selection and get a true feel for how the story is supposed to be told, "it had to be Mike's story" Rae stated.

It shows us that even when we experience what seems like crushing defeat, new doors open to us, and new destinies reveal themselves.

On a deeper thematic level, *Monsters University* is about having goals, doing everything you can, and everything “right,” to achieve these goals, but ultimately not being able to. For Mike, this means devoting his life to studying and learning as much as possible about “Scare Theory” and “Scare Techniques” so that he can become the world’s best “Scarer.” He gets into the one of the most elite colleges, Monsters University, but unfortunately his luck takes a turn for the worse when he is quickly removed from the scare program because he simply isn’t scary. *Monsters University* shows Mike’s journey as he experiences de-

feat and major setbacks, and has to change his plans. This movie is about figuring out who you are, who your friends are, and what you are meant to do. It shows us that even when we experience what seems like crushing defeat, new doors open to us, and new destinies reveal themselves. In fact, this theme was quite personal to Rae, and similar to the situation she faced when her basketball dreams could no longer become a reality. Mike wants to be a Scarer, he ends up an incredibly successful asset to Sully and Monsters Inc. in a role as "Scare Support". Similarly, Kori Rae wanted to play basketball, but she ended up at Pixar as an incredibly successful producer. Which goes to show, as one door closes, you never know

what kind of opportunities await through another door.

In all, *Monsters University* is a great film, and Pixar delivered an excellent story and message. If that doesn't convince you to go and watch it, maybe this will — when searching for inspiration for the campus of *Monsters University*, the Pixar team headed to New England to tour MIT and Harvard. The elements from Harvard were apparent, but I couldn't quite tell what inspiration the team gleaned from good old TFP, so I asked Rae what was incorporated from MIT, to which she responded, “the disgusting frat bedrooms.” So maybe watch the movie and keep your eye out for elements of MIT in Mike and Sully's bedroom...



COURTESY OF DISNEY PIXAR

Kori Rae, the Pixar producer of *Monsters University*.

BALLET REVIEW

Minimalism and transient intimacy realized

José Mateo showcases a triplet of darkly expressive pieces

By Attila Forruchi

The José Mateo Ballet Theatre of Cambridge opened its 28th season with a performance of *Shadows Fleeting*, the first of five ballet repertory performances of the 2013–2014 season. *Shadows Fleeting* features three unique works — *Dark Profiles* (2001), *Covens* (2006), and *Vanished Verses* (premiering this season) — by José Mateo, the company's impresario, choreographer and artistic director. The recurrent theme of the night was exploring the darker side of Mateo's provocatively expressed repertory.

The night's opener, *Dark Profiles*, is set to one of Beethoven's lesser-known and least accessible string quartets, *Grosse (Grand) Fuge in B Flat*. The work's choreography, like its accompaniment, is complex and perplexing. Madeleine Bonn's graceful

solo performance morphs into a touch-less duet with Ivaylo Alexiev, who frames Bonn's ballet with the authoritative flair of his own movements. Theirs is followed by three, increasingly more dramatic and subtly erotic

The only discernible plot line of the night's program seems to suggest Angie DeWolf's fleeting flirtations with David Dubois in a world of silence and tranquility. Their duet performance is passionate yet elegant.

duets as Beethoven's *Fuge* surges ahead. The seven-ballerina chorus finale seems a bit underwhelming, and is unable to keep pace with the forcefully-joyous crescendo of the maestro's *Grand Fuge*.

The second act, *Covens*, features James MacMillan's more accessible and resonant *Symphony No. 3*, a surprisingly good choice for ballet stripped of its grandeur and elitist embellishments. The only discernible

plot line of the night's program seems to suggest Angie DeWolf's fleeting flirtations with David Dubois in a world of silence and tranquility. Their duet performance is passionate yet elegant. The forceful and powerful striding entrance of Elisabeth Scherer forebodes a more tragic fate for the lovebirds. As drumbeats roll on, shadows fleeting enter and exit the stage with higher and higher velocities. What appears to be a mob of covens eventually occupies the whole stage, forming a cornucopia of ballet figures exhausting their stamina.

The finale is the world premiere of *Vanished Verses*, choreographed by Mateo, as he candidly admits, in less than two weeks of rehearsals, and set to the crisp, clean, virtuosic tonality of J.S. Bach's *Cello Suite in D Major*. The plotless emotional amalgamation starts with the full cast rhythmically dancing to the precise cadence of Bach's joyous piece. Formations were imprecise, and there were a few seemingly near-collisions here and there, but Mateo's mastery of the art of choreographing fleeting intimacy in motion is evident in the next four duets and, in particular, in those with Scherer and Keith. Elisabeth Scherer personifies the soul of Mateo choreography perhaps better than any other. She looks nothing like the classical ballerina — who is dainty, fragile and elastic to contortion — rather, she "feels" solid, powerful, and imposing, especially given the audience's proximity to the dancers, and moves with the fluidity, elegance, and regal poise and aplomb of a cruising Rolls Royce. There is

Shadows Fleeting

**By José Mateo Ballet
Theatre**

The Sanctuary Theatre

Oct. 4–27, 2013

nothing heavy, forced or tortured about her movements.

To appreciate *Vanishing Verses*, one must resist the temptation to dissect the duets to their technical details. To be sure, the jumps are not as high and the turns not as sharp, as one might expect, and there are even one or two wobbly pirouettes. However, by Mateo's use of reverse eroticism, by stripping the men to their underwear while the women remain fully clothed, and subtle and infrequent touching, he manages to vividly convey a sense of provisional intimacy between the couples without resorting to long gazes or convoluted lifts and dips.

The venue, the Sanctuary Theatre, is nested within the walls of the imposing New Gothic architecture of the Old Cambridge Baptist Church in Harvard Square. However, the all-white, sparse set design, and the minimalist décor, juxtaposed with cabaret-style seating right onto the stage, give the interior spaces a very deep intimate feel, where one almost feels the pulsation of the dancers' breathing, the palpitation of their heart beats, and the condensation of sweats on their foreheads.

Mateo's ballet productions may lack the weight and monumentality of classical ballet, but he attempts to compensate for this with his daring originality, frontal intimacy, and choreographed deconstruction of ballet to its essential forms, without puffy costumes, elaborate decorations or glittery ornamentations.

If the legacy of the legendary Ballets Russes is sometimes described as “when art danced with music,” then the legacy of a quarter-century of José Mateo’s Ballet may very well be described as “when bare movement romanced with music.”



GARY SLOAN

A still shot of *Dark Profiles* by José Mateo, the first of three pieces in the ballet production *Shadows Fleeting*.

Undergraduate representatives for Institute Committees selected

The Undergraduate Association (UA) Council and Chair of the Faculty Steven Hall approved Institute Committees’ undergraduate representatives Sept. 25. These students were chosen through a “competitive selection process by the UA’s Nominations Board,” according to UA Chief of Staff Shruti Sharma ’15. MIT Institute Committees — which are run by the faculty or administration and include undergraduate and graduate representatives — address a variety of issues at MIT.

Student representatives are usually voting members and are intended to “ensure that interests of the student body are understood and acted upon by the committee,” according to the UA’s Institute Committee application document. Among the new Institute Committees this year is the Presidential Advisory Cabinet.

Presidential Advisory Cabinet

- Sidhanth P. Rao ’14
- Thomas D. Alcorn ’14
- Elise M. Myers ’14
- Caitlin A. Mackey ’15

Corporation Joint Advisory Committee

- Sidhanth P. Rao ’14
- Anika Gupta ’14
- Leonid Grinberg ’14

Faculty

Faculty Policy Committee (FPC)

- Patrick A. Hulin ’14

Committee on the Undergraduate Program (CUP)

- Anubhav Sinha ’14
- Anna Y. Ho ’14
- Benjamin S. Frank ’14
- Colin P. McDonnell ’16

Committee on Curricula (COC)

- Ryan M. Lau ’15
- Benjamin J. Kraft ’15
- Bryan M. Williams ’16
- Naina Mehta ’15

CUP Subcommittee on the HASS Req (SHR)

- Cory D. Hernandez ’14

CUP Subcommittee on the Communication Req (SOCR)

- Trevor J. Mulchay ’15
- Keerti Shukla ’15

Committee on Discipline (COD)

- Ishaan Kumar ’14
- Maria R. Chan ’14
- Babajide Akinronbi ’14

Committee on Academic Performance (CAP)

- Susan H. Cavender ’15
- Laura D. Royden ’14
- Betsy Riley ’14

Committee on Student Life (CSL)

- Jessica J. Yang ’15
- Ranna W. Zhou ’14
- Mahesh Thapa ’15

Committee 2013-2014Committee on the Library System (CLS)

- Reuben Saunders ’16
- Ogheneovie O. Orieka ’14

Committee on Undergraduate Admissions and Financial Aid (CUAFA)

- Pritee S. Tembhekar ’14
- Jeffrey M. Sperling ’15
- Rachel C. Reed ’16

Presidential Committees

Women’s Advisory Board (WAB)

- Shruti Sharma ’15

MacVicar Advisory Committee

- Priyanka M. Chatterjee ’15
- Ian W. Chesser ’16

Baker Foundation

- Jonathan K. Tebes ’14
- Betsy Riley ’14

- Anisha N. Gururaj ’15
- Emily K. Shorin ’16
- Tushar V. Kamath ’16

Compton Advisory Committee

- Sidhanth P. Rao ’14

Community Service Fund Board (CSFB)

- Shruti Sharma ’15
- Danielle V. Finney ’16

Institute Wide Taskforce on Education (IWTF)

- Devin T. Cornish ’14
- Anubhav Sinha ’14
- Patrick A. Hulin ’14

Medical Consumer’s Advisory Council (MCAC)

- Alice M. Zielinski ’16
- Sophie H. Chung ’14

Campus Energy Task Force

- Karen D. Hao ’15

MITx Subcommittee

- Ravi M. Charan ’14
- Colin P. McDonnell ’16

CAC Advisory Board (CACAB)

- Carrine M. Johnson ’14
- Taleen M. Afeyan ’14

Committee on Race and Diversity (CRD)

- Margo Dawes ’15
- Cory D. Hernandez ’14

Housing Strategy Group

- Lauren A. Jefferson ’14

ROTC Oversight Committee

- Kira M. Schott ’16

Subject Evaluation Advisory Committee

- Billy Ndengeyingoma ’15

Commencement Committee

- Sidhanth P. Rao ’14
- Devin T. Cornish ’14
- Anika Gupta ’14
- Jean Xin ’14

Working Group on International Support

- Sarah K. Mountjoy ’14

Student Health Advisory Committee

- Elisabeth L. Rosen ’14

IS&T Vice President Search Committee

- Leonid Grinberg ’14

Electronics Record Committee

- Dawna Bagherian ’14

Committee on the Use of Humans as Experimental Subjects (COUHES)

- Jennifer Li ’14

Student Life Orientation Programs and Experiences Committee (SLOPE)

- Nancy Z. Lu ’16
- Katharine Xiao ’16

First Year Experience Committee (FYE)

- Daniel S. Wang ’16
- Amy Q. Zhang ’16

Council on Family and Work (CFW)

- Georgina Dorminy ’14

Athletics

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- Nathan H. Varady ’16
- Chester Chambers ’15

Recreation Advisory Committee

- Alana H. Peters ’16
- Cali J. Warner ’16

Technology

MIT Council on Educational Technology (MITCET)

- Jeff Tzu-Hsien Chan ’14

Committee on Student Information Policy (SIP)

- Hussein M. Abdallah ’16

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- Jacob B. Hurwitz ’14

OCW Faculty Advisory

- Vineel A. Chakradhar ’16

MIT Online

- Bianca S. Homberg ’15

UA Nominations Board

- Shruti Sharma ’15 (Chair)
- Devin T. Cornish ’14
- Patrick A. Hulin ’14
- Colin McDonnell ’16
- Laura D. Royden ’14
- Anubhav Sinha ’14
- Sidhanth P. Rao ’14


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Bexley Hall recommended for permanent closure

Students hope to preserve dorm's culture; administrators also indicate similar goals

Bexley, from Page 1

visory group, the membership of which consists of Kristjan Eerik E. Kaseniit '14, Christopher J. Sarabalis '14, Nicolas M. Brown '16, and Noga Feinberg '15 representing Bexley, DormCon President Eli H. Ross '14, and Vice President for Residence Exploration Alina Kononov '14 as student representatives. Much of the time in the meetings was spent going through the facts and figures that Facilities had collected in their evaluation process.

"I had the opportunity to review facts regarding Bexley's structural concerns through engineering reports, pictures, and presentations," Ross said. "The damage was indeed

quite substantial, and I applaud DSL and the Department of Facilities for taking the time to go through these details with the group."

Although the members of the group were well-informed of the situation regarding Bexley up until this point, they did not hear about the recommendation to demolish Bexley until only slightly before Chancellor Eric Grimson PhD '80 announced the news to the broader Bexley community in an email.

Kaseniit said that although the recommendation was not a surprise, "The decision to demolish was made based on no input from us."

"We were concerned that the decision to demolish versus reno-

vate was done so hastily, especially given that demolishing leads to a plethora of options for the land, while renovation leads to the creation of a new dorm," Kaseniit said. "We were told that there is no evil master scheme in the works behind the curtains, and it is the potential hidden costs that make demolition cheaper than renovation."

Next steps

Both Grimson and Dean of Student Life Chris Colombo expressed that there will be new undergraduate dorm to replace Bexley should these plans to demolish the building go through.

"We need to figure out how to replace the lost beds. That is a key

priority for Dean Colombo and me," said Grimson

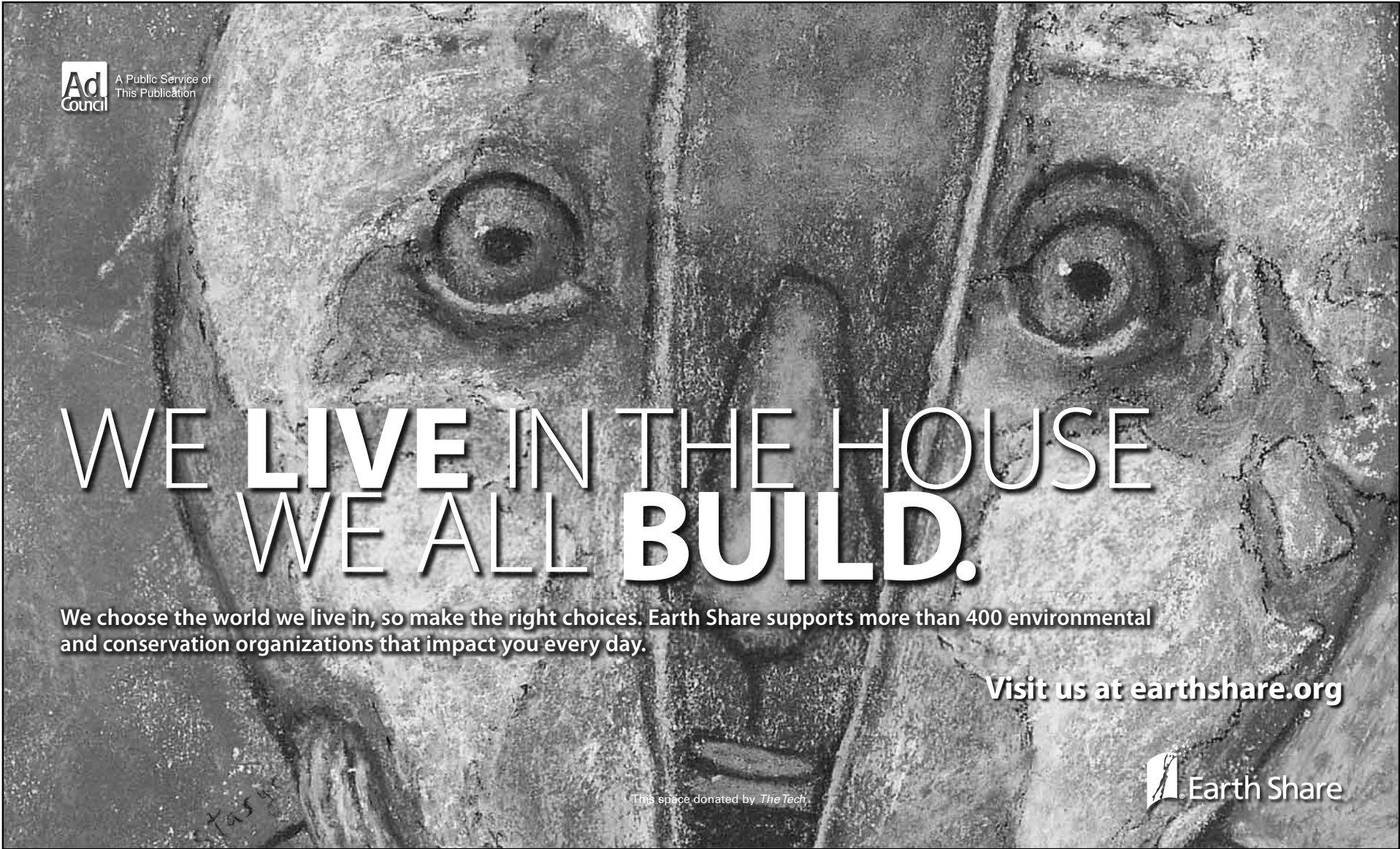
While a new building may not be on the same site that Bexley currently occupies, the hope of students and administrators is that Bexley's community will continue. Currently, former Bexley residents have space in the Pritchett Lounge in Walker Memorial to use for gatherings and events 24/7.


"We are glad we get to use the Pritchett Dining space, though there are still some kinks in communication with the various administrators with regards to our use of the space," Kaseniit said. "An important issue in keeping a community going, as I'm sure many living groups here know, is the influx of

like-minded people. This is somewhat hard for Bexley, given that many of us are strong individualists. We are already seeing new faces at our shenanigans in Pritchett, which is great. However, this must be more seriously discussed in any future advisory groups regarding Bexley."

Colombo and Grimson both said that they are doing what they can to support the Bexley community through this rough time. The lounge space is only the first step — Grimson is working to convene a group to look at all of undergraduate housing at MIT, including looking at solutions for how to approach the situation if Bexley is demolished.

"I believe that at that MIT, there should be a Bexley," Sarabalis said.






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Students, professors shed light on new biology GIRs

New 7.01x variations target more fields, geared towards different biology backgrounds

Biology, from Page 1

“Personally, I find the level of detail we go into in lecture really cool,” said “But the best part is the guest lectures. Every so often, a scientist in a field related to the current module comes in and gives a talk on their research and work.”

Okumura teaches the course alongside Professors Michael Laub and Hidde Ploegh. The course is designed around six modules: antibiotic resistance, influenza, genetics and genomics, biotechnology, the microbiome, and diabetes.

“With those six lenses, we’re able to teach all the fundamental principles of biology and how those principles relate to the biology that goes on all around us in the world and that you see in the news all the time,” Okumura explained. “It really makes it relevant. We get at that relevance by reading popular press articles and having discussions and having students do in-depth presentations about particular topics within those fields.”

The idea for the course was first floated around two years ago by Chris Kaiser, then head of the Department of Biology. However, Oku-

mura says that it wasn’t until a year ago that the design for the course really got underway. The module topics were picked based on their relevance in the news, the professors’ expertise, and the shared requirements for an intro biology course.

There are currently 40 students enrolled in the mostly freshman class, a smaller number than the instructors were initially expecting.

“I think there are a few factors that went into that,” Okumura said. “I think, first of all, students are less inclined to take a course that hasn’t been offered before because they don’t know what to expect. I also think that the word got out on the street somehow that this was the harder class. Nobody can really say that. Nobody’s taken this class before, so there’s no way to know if it’s actually harder or not.”

Farris agreed with Okumura saying, “My one complaint about the class would probably be that since it’s the first year they have it, there are no past exams to study from so it’s a little harder to study for than the other 7.01x’s, I think.”

Okumura envisions that the format of the class will remain the

same in future years, but that the module topics might change. Although it’s not yet clear which semester 7.015 will be offered in the long-term, Okumura says that the department has made a commitment to supporting 7.015 in the long run.

Of the two new bio classes offered in the fall this year, 7.016 more closely resembles 7.012.

“It’s really cool to see the real-time applications of the concepts we’re learning — it’s a great reminder that we’re learning material that’s extremely current and relevant to the field of biology today,” added Kenausis.

7.016

Of the two new bio classes offered in the fall this year, 7.016 more closely resembles 7.012 in lecture, homework, and recitation style. Like 7.012, 7.016 is geared towards students with or without a background in biology. Professors Bar-

bara Imperiali, Angelika Amon, David C. Page, and Dr. Diviya Sinha have taken the helm in developing and teaching the new class.

“For several years with biology being made an institute GIR, the class that was being run in the fall was truly overburdened,” explained Imperiali. “The numbers were too large and we were having to video-remote the class. The department made a commitment to the Institute that we would run another large class so that every student would have the chance to be in the classroom and participating directly rather than through a remote system.”

In addition to easing crowding, the class is piloting the use of clickers in an intro bio class to try and receive real-time feedback. However, some students have expressed frustration at having to buy the iClicker 2’s.

“I was annoyed by the fact that we were required to buy a different clicker than the one most people use in 8.01TEAL,” commented Teresa C. Hegarty ’17. “I think it would make sense to use the same type of clicker for all clicker classes, but I like the instant feedback and clarification that clicker questions provide.”

The first half of the class covers the foundational material shared by all 7.01x biology classes, while the second half moves into topics that the professors found particularly interesting. These include cancer, evolution, fluorescent proteins, the cell and signaling, and medically-relevant topics.

“One of my goals for the class was to take topics in biology that are in the news, that people are thinking about, that are on the cutting-edge of medicine, and sort of connect it to the basics and use them as tools to teach people basic biology,” said Amon.

Both Amon and Imperiali said that they have had a surprising amount of fun teaching an introductory biology class so far.

“I think it’s a real honor to have all these freshmen in our class,” said Imperiali. “We get to give them a great course in the first semester that they’re at MIT. We realized the first day of class that it was probably their very first class at MIT”

Amon added, “We said to them in the beginning, ‘My goal is to make all of you Course 7 majors.’ That has to be the goal — to get people excited and interested in biology.”



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IMAGE: Photograph of Katerina Cizek, taken by Jaime Hogge. Courtesy of the National Film Board of Canada



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```
import new_skills

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    return linux, OSX, javascript, applescript, perl, python

if you.interest == True:
    print "E-mail join@tech.mit.edu"
```

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New sustainability office starts strong

Newman excited for innovating sustainability here at the Institute

Sustainability, from Page 1

at Yale, Newman wants to make a distinction between her previous work and her work here.

“What I do at Yale, I’m not going to do at MIT, because MIT is its own entity. I want to bring a wealth of experience to MIT, want to make sure the framework that I develop reflects the culture and mission of MIT. There will be so much that will be similar, but also opportunities for different types of leadership,” said Newman.

She hopes that the dedication to new models and innovation will translate well into sustainability research, paving the way for a cutting-edge approach to sustainability. “A robust, innovative sustainability program here is going to approach all of these issues from a systems perspective first; we will figure out where is the best leverage point for the biggest impact,

and that really changes the game,” said Newman.

Newman hopes to use her experience to “bring a new voice to the table, asking different questions and having new ideas.” For Newman, the excitement comes from the complexity of the situations and her ability to solve them systematically. This includes analyzing each realm of sustainability, and then bringing the proper expertise in to provide a resolution.

Newman is already busy assessing the current infrastructure of the university, engaging faculty to find new approaches to sustainability, and planning out a comprehensive roadmap for sustainability at the institute.

“In a couple of months people will start to see a framework for the office that’ll interact with folks around campus; I hope to engage people and say, ‘Can we think of this differently?’” said Newman.

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MIT fined for plant emission violations

*Cogen plant to retrain employees,
upgrade exhaust stacks, venting*

Air quality, from Page 1

heat, cold water, and electricity to MIT since 1995. Powered by natural gas, it contains boilers, a combustion turbine, and an emergency generator.

MIT plans to retrain employees who monitor emissions and opacity, implementing biannual refresher training sessions for staff. Furthermore, MIT will upgrade the exhaust stacks for natural gas boilers and emergency diesel engines by the end of this year, increasing

the height of the stacks and adding vertical vents. The plant will also either insert active particulate matter filters on the diesel engines or remove them by March of next year.

"We have already implemented a number of changes and anticipate that we will be able to complete the remaining work by the deadlines set forth in our agreement," said VanSchalkwyk, which means that in the following months, students can expect even more construction at MIT.

This space donated by *The Tech*

The last challenge of a socially conscious society?

Depression strikes millions— indiscriminately. Depression is simply a suppression of brain activity that makes life unbearable. And even though depression is readily treatable, only 1 in 5 ever seeks treatment. Why do so many just drag themselves along or eventually seek relief through suicide? First, there's the lack of awareness of depression— as an illness and as the threat that it is to each and every one of us. Second, there's the unwarranted negative stigma attached to it. You know, the 'mental' thing. It's time to collectively face depression. To know it's an illness, not a weakness. And it's a challenge that's long overdue. It's taken too many of us already.

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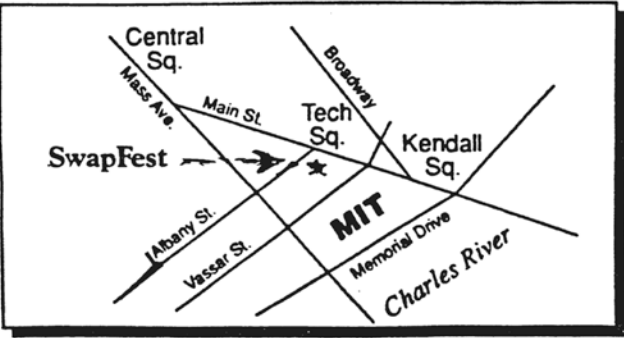
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THE NATURALIST’S NOTEBOOK

A glacier’s gift

The story of New England’s forests

By Davie Rolnick

I’m from Vermont. My state has many trees and a few people. When you combine those two things, you get delicious maple syrup. In October, you also get hordes of tourists — the so-called “leaf-peepers.” Vermont calls itself the Green Mountain State, but it is really now, when the mountains are red and orange, that the forest gets the most attention. With winter approaching, trees pump the precious chlorophyll from their leaves and store it safely in their roots, revealing other leaf pigments that were previously obscured by green: the carotenoids (yellow/orange) and anthocyanins (red).

The autumn transformation starts with occasional splashes of color. Spots of scarlet appear on the leaves of the red maples, then whole trees seem to burst into flame. Next, the sugar maples glow golden orange. On the mountain slopes, birches and aspens add a stroke of yellow, and are matched by white ash and silver maple in the valleys. Red oaks join in, asserting a sober chestnut-red. The beeches become rainbows, as the outermost leaves of each tree turn orange-brown, the middle leaves change to yellow, and the innermost leaves preserve a bright spring-green. Finally, a few roadside sumacs are left to redden the landscape as it settles into winter stillness.

Colorful trees and rich forests have only recently come to New England. Only 20,000 years ago, a glacier covered the entire Northeast in ice up to a mile thick. As it oozed southward under the pressure of its own weight, it scoured vegetation and earth

from the ground and gouged large chunks out of mountains. About 10,000 years ago, the climate warmed and the glacier receded, leaving behind a barren wasteland. As the glacier melted, it kindly replaced all the rocks and detritus it had picked up in its headlong advance. This is the origin of those giant boulders you may find lying around in the forest; they were chiseled out by the glacier and left behind.

Trees colonized the newly exposed mountains. Some slopes faced north and received less sunlight, making them cold and damp. In the darkest ravines, the hemlocks — giant conifers that can live up to a thousand years — took root. On the windy upper slopes, the birches and poplars settled, trees from the far north. Birch bark peels off in sheets, enabling the tree to rid itself of a pesky fungus. This attribute makes it an ideal material for dishes and canoes. Poplars (also called aspens) are known for bending in the wind, an adaptation for enduring harsh northern blizzards and heavy snowfall. The bark of poplars is slightly green from chlorophyll, which is used for photosynthesis even when the cold of winter makes it impossible for leaves to grow.

The sunny south-facing slopes, covered with rocks by the glacier, were warm and dry — the perfect place for forest fires. We humans flatter ourselves for having “invented” fire, but natural fires are a common occurrence over much of the world, and are actually necessary to the survival of many species. Trees like oaks, pines, and hickories are specially adapted to resist fire. They have thick bark and large tough seeds

that sometimes don’t sprout at all unless they’re lightly burned first. Now that people have started extinguishing forest fires, some of these trees are having a hard time competing.

The beautiful American beech is another tree that colonized these south-facing slopes. It isn’t a fire-resistant species: it just wanted to stay warm. Beeches come from the tropics, and this species is the northernmost of its kind. However, it still looks like a rainforest tree. It has huge, broad branches, perfect for climbing, and long-tipped leaves that channel the rain away.

is used for making baseball bats and fancy furniture. Elms are stately, with spreading branches, and were once planted in gardens and parks, but have now become very rare as a result of an invasive fungus called Dutch elm disease.

The quintessential New England tree is the maple. Different species grow in each habitat. In rich lowland soils, the dominant tree is the large sugar maple. Around rivers, it is replaced by the silver maple, a drooping, elegant tree whose leaves look silver from underneath. In bogs and poor soils, there is the red maple, while on hillsides the

As the trees of New England change color, think about glaciers as you admire the carotenoids. Even at MIT, fall foliage is quite spectacular.

The smooth, pale gray bark, which lovers sometimes write on, is also an adaptation to the tropics, where it stops the tree from being overrun by vines and other plants looking for a foothold. Unfortunately, smooth bark is a terrible idea in a northern winter, since it splits easily in the cold. Almost every other tree here has ridged bark, which can expand and contract with temperature changes.

The valleys of New England were vast lakes only a few thousand years ago, filled with meltwater from the retreating glaciers. When the water receded, it left behind rich soil that is now perfect for farming. Trees such as the White Ash and American Elm grow in these soils. Ashes are straight, tall trees, with exceptionally hard wood that

striped maple offers its huge leaves to hikers who need toilet paper. At the very tops of mountains lives the tiny mountain maple, rarely bigger than a sapling.

As the trees of New England change color, think about glaciers as you admire the carotenoids. Even at MIT, fall foliage is quite spectacular. The banks of the Charles are planted with exotic Japanese zelkovas, which turn a bright red-brown. In Killian Court, the red maples are scarlet and the elms are yellow. There are even sugar maples on the far side of Next House, with orange leaves and the promise of syrup.

But, of course, the best maple syrup comes from Vermont.

Solution to Crossword
from page 7

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Solution to Techdoku II
from page 8

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| 3 | 5 | 1 | 4 | 6 | 2 |
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| 6 | 2 | 4 | 1 | 3 | 5 |

Solution to Sudoku
from page 7

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 9 | 4 | 7 | 6 | 1 | 8 | 5 | 3 | 2 |
| 3 | 2 | 1 | 9 | 7 | 5 | 8 | 4 | 6 |
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| 4 | 3 | 2 | 8 | 9 | 1 | 6 | 5 | 7 |
| 6 | 9 | 5 | 7 | 2 | 3 | 4 | 8 | 1 |
| 7 | 1 | 9 | 2 | 8 | 4 | 3 | 6 | 5 |
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Solution to Techdoku III
from page 8

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|---|---|---|---|---|---|
| 4 | 3 | 5 | 1 | 6 | 2 |
| 3 | 2 | 4 | 6 | 5 | 1 |
| 2 | 1 | 3 | 5 | 4 | 6 |
| 1 | 6 | 2 | 4 | 3 | 5 |
| 6 | 5 | 1 | 3 | 2 | 4 |
| 5 | 4 | 6 | 2 | 1 | 3 |

Solution to Techdoku I
from page 7

| | | | | | |
|---|---|---|---|---|---|
| 5 | 4 | 6 | 1 | 3 | 2 |
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| 3 | 2 | 4 | 5 | 1 | 6 |
| 1 | 6 | 2 | 3 | 5 | 4 |
| 2 | 1 | 3 | 4 | 6 | 5 |
| 6 | 5 | 1 | 2 | 4 | 3 |

Solution to Techdoku IV
from page 8

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|---|---|---|---|---|---|---|---|---|
| 8 | 5 | 7 | 2 | 3 | 4 | 9 | 6 | 1 |
| 5 | 2 | 4 | 8 | 9 | 1 | 6 | 3 | 7 |
| 1 | 7 | 9 | 4 | 5 | 6 | 2 | 8 | 3 |
| 2 | 8 | 1 | 5 | 6 | 7 | 3 | 9 | 4 |
| 3 | 9 | 2 | 6 | 7 | 8 | 4 | 1 | 5 |
| 6 | 3 | 5 | 9 | 1 | 2 | 7 | 4 | 8 |
| 9 | 6 | 8 | 3 | 4 | 5 | 1 | 7 | 2 |
| 7 | 4 | 6 | 1 | 2 | 3 | 8 | 5 | 9 |
| 4 | 1 | 3 | 7 | 8 | 9 | 5 | 2 | 6 |

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